

METHOD OF OPERATION
LINE CIRCUIT

Blank Incoming - For Use As Intercepted Line - Full Mechanical Switching System.

GENERAL DESCRIPTION

1. This circuit is used as an intercepted blank incoming trunk in a full mechanical power driven office. It is selected by a local, inter-office, or cordless incoming selector when the called line terminates on a non-equipped or blank final frame.
2. When this trunk is seized by an incoming trunk, the trunk lamp at the intercepted position lights. When the plug of an answering cord is inserted in the answering jack, the lamp is extinguished and the talking connection to the calling subscriber, is established.

DETAILED DESCRIPTION

OPERATION

A (1) Local or Inter-office Call.

3. When the tip, ring and sleeve terminals of this circuit are seized by a local or inter-office incoming trunk, a circuit is closed to operate the L relay. This circuit is traced from battery through the inner winding of the line relay in the associated incoming trunk (not shown), over the ring side of this circuit, through the break contact of the CO relay, to ground through the winding of the L relay. A circuit is also closed from battery through the 700 ohm and 300 ohm resistances break contact of the CO relay, over the tip side of the fundamental circuit, through the stepping relay in the sender circuit, back over the ring side to ground in the incoming trunk. The L relay operated, closes a circuit from ground on one of its make contacts, break contact of the transfer key, outer contacts of cam B, to battery through the R magnet, advancing the switch from position 1. (The A cam will advance the switch for a complete revolution as a sender run down). The RD relay operates, when the contacts of the low speed interrupter make over a circuit from battery on the armature of the L relay, inner winding of the RD relay, break contact of the transfer key, to ground through the closed contacts of the interrupter. The RD relay operated, locks from battery through its outer winding and own make contact, to the same ground on the interrupter for a period of 6.4 seconds, thus allowing enough time for a sufficient number of impulses to be sent back to run down the sender. The operation of the RD relay also operates the TK relay from ground on its armature to battery through the winding of the TK relay. The TK relay operated, locks through its made contact to ground on the sleeve of the incoming trunk.

NOTE:- Interrupter I has seven second cycles and is closed for 0.4 seconds.
Interrupter II has seven second cycles and closes at the same time as I and remains closed 6.4 seconds.

4. As the switch advances from position 1 to position 18, ground from cam C is intermittently connected to the tip side of the fundamental circuit through the break contact of the transfer key and the make contact of the RD relay, successively short circuiting and permitting the re-operation of the stepping relay in the associated sender circuit. When the 11 contact of the interrupter opens, the RD relay releases, in turn

operating the CO relay from ground on the armature of the RD relay, winding of the CO relay, to battery on the armature of the TK relay. The CO relay operated, functions as follows:- (a) Disconnects the battery from the tip side of the fundamental circuit. (b) Opens the circuit through the L relay, releasing the relay and causing the incoming trunk to advance. (c) Closes a circuit from ground on its armature, break contact of the SL relay, through the #2-G trunk lamp, to battery through the auxiliary signal circuit, lighting the trunk lamp. (d) Connects the tip and ring side of the trunk through to the answering jack at the intercepting position.

5. When the plug of an answering cord is inserted in the answering jack, battery on the sleeve of the cord operates the SL relay, extinguishing the trunk lamp.

A (2) Cordless Call.

6. When this trunk is seized by a cordless incoming trunk, it is held busy by ground on the S terminal of the incoming trunk. The tip side of the fundamental circuit is also closed from battery through the 700 ohm and 300 ohm resistances over the tip side of the fundamental circuit, to ground through the stepping relay in the associated cordless sender circuit. The ring side of the fundamental circuit is also closed from battery through the 1200 ohm winding of the SH relay in the associated sender selector circuit, over the ring side, through the break contact of the CO relay, to ground through the winding of the L relay, which operates. From this point on, the operation of this circuit is the same as previously described under A (1).

A (3) Disconnect.

7. When the receiver at the calling station is replaced on the switchhook, the incoming trunk switch advances, in turn removing ground from the sleeve of this trunk, releasing the TK relay. The TK relay released, closes a circuit from ground on the armature of the SL relay, break contact of the TK relay, to the sleeve terminal of the trunk, thus holding this trunk busy until the plug of the cord is removed from the answering jack. The release of the TK relay also opens the circuit through the CO relay, which releases opening the circuit to the tip and ring of the cord circuit and giving a disconnect signal to the operator.

8. When the plug of the answering cord is removed from the answering jack, the SL relay releases, in turn disconnecting ground on its armature from sleeve terminal, thus restoring the circuit to normal.

9. If the plug of the cord is removed from the answering jack before the receiver at the calling station is replaced on the switchhook, the SL relay releases, in turn re-lighting the trunk lamp.

CIRCUIT REQUIREMENTS

OPERATE

NON-OPERATE

RELEASE

Spl. E8
D-20063
(Coded
E563)
(L)

Test .015 amp.
Re-adj. .012 amp.

Test .0076 amp.
Re-adj..0080 amp.

Spl. E8
D-20216
(Coded
E563)
(TK)

Test .014 amp.
Readj. .008 amp.

Test .0047 amp.
Re-adj. .0050 amp.

Spl. E186
D-20480
(Coded
E644)
(RD)
Inner
Winding

Test .030 amp.
Re-adj. .028 amp.

Test .015 amp.
Re-adj. .016 amp.

Outer
Winding

Test .030 amp.

Spl. E197
D-20255
(Coded
E572)
(CO)

Test .018 amp.
Re-adj. .016 amp.

Test .0095 amp.
Re-adj. .010 amp.

Spl. E303
D-20633
(Coded
E608)
(SL)

Test .072 amp.
Re-adj. .065 amp.

Test .042 amp.
Re-adj. .044 amp.